



Name _____ Date _____

Simple Events (Pages 253–256)

A list of all possible results, or **outcomes**, is called a **sample space**.

Probability is the chance that a specific outcome, or **event**, will happen.

Finding Probability	<p>Probability = $\frac{\text{number of ways that an event can occur}}{\text{number of possible outcomes}}$</p> <ul style="list-style-type: none"> • When it is impossible for an event to happen, its probability is 0. • When it is certain that an event will happen, its probability is 1.
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EXAMPLE

A bag contains 4 red and 3 blue marbles. One marble is drawn at random.

What is $P(\text{blue})$?

$P(\text{blue})$ is the probability of drawing a blue marble.

There are 3 ways that a blue marble can be drawn.

There are $4 + 3$, or 7, possible outcomes.

$P(\text{blue}) = \frac{3}{7}$ or, as a decimal, $0.\overline{428571}$

Try These Together

1. What is the probability that a number cube is rolled and the outcome is a 3 or a 4?
HINT: Find the number of outcomes that are 3 or 4 and divide this by the total number of possible outcomes.
2. What is the probability that a stone is randomly tossed onto the first square of an 8-square hopscotch board?
HINT: There are 8 possible outcomes.

PRACTICE

State the probability of each outcome as a fraction and as a decimal.

3. A person wearing red is randomly picked from a group of 5 people wearing red and 4 people wearing blue.
4. A green tennis ball is picked from a bag of 4 green, 7 yellow, and 5 white tennis balls.
5. A month picked at random starts with A.
6. A positive one-digit number picked at random is even.

These numbers have been written one each on cards and mixed in a hat: 1, 2, 2, 3, 4, 5, 5, 5, 6, 6, 7, 8, 9, 10. A person draws one number at random without looking. Find the probability of each outcome.

7. $P(1)$
8. $P(3 \text{ or } 10)$
9. $P(\text{not } 5)$
10. $P(6)$



11. **Standardized Test Practice** In a deck of 52 playing cards, there are 13 cards in each of the suits: hearts, diamonds, spades, and clubs. What is the probability that the first card dealt is a spade?

- A** 0.13 **B** 0.25 **C** 0.50 **D** 0.35

Answers: 1. $\frac{1}{10}$; 0.1 2. $\frac{1}{10}$; 0.1 3. $\frac{1}{10}$; 0.1 4. $\frac{1}{10}$; 0.1 5. $\frac{1}{10}$; 0.1 6. $\frac{1}{10}$; 0.1 7. $\frac{1}{10}$; 0.1 8. $\frac{1}{10}$; 0.1 9. $\frac{1}{10}$; 0.1 10. $\frac{1}{10}$; 0.1 11. B